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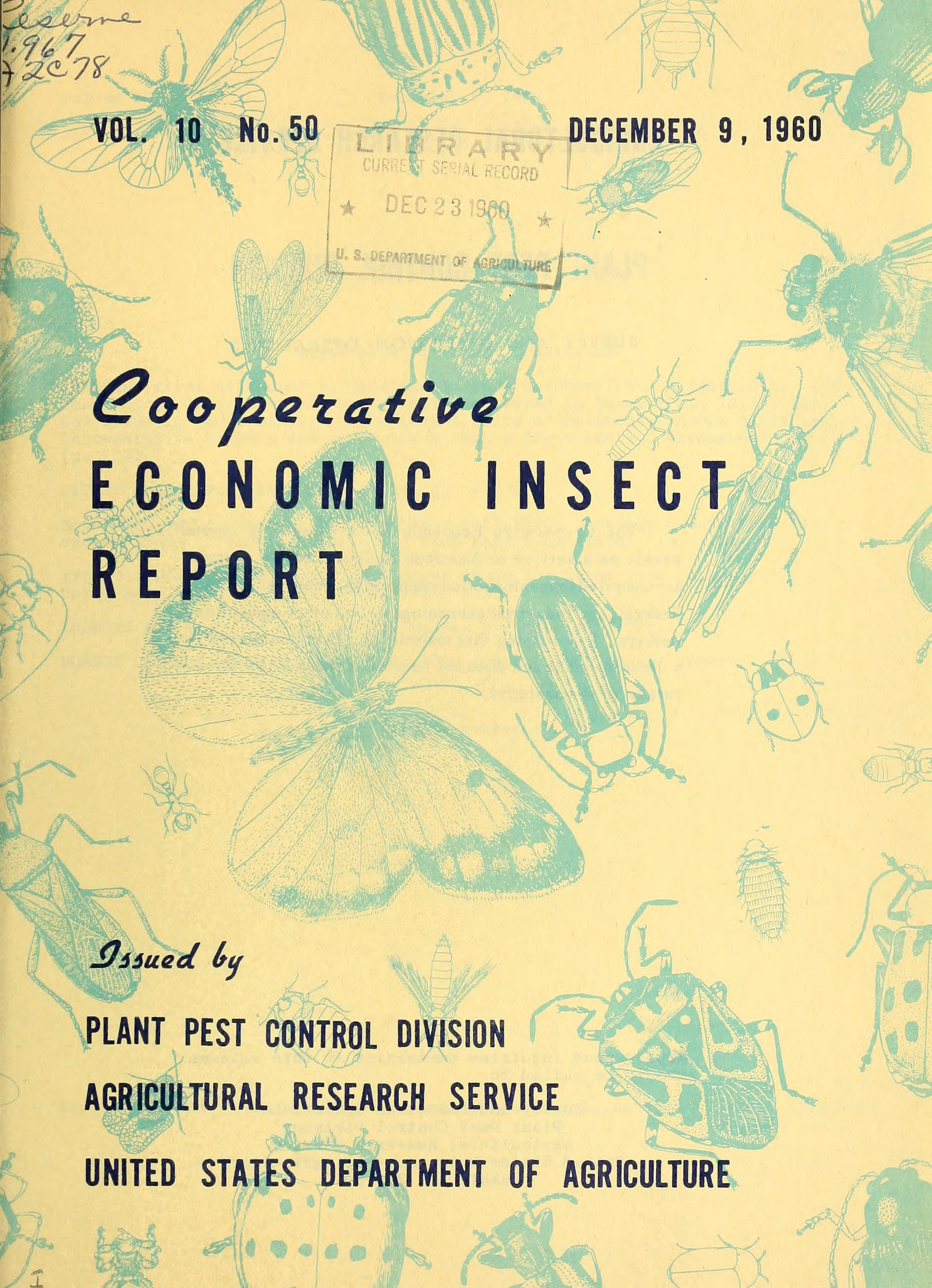

VOL. 10 No. 50 DECEMBER 9, 1960

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U. S. DEPARTMENT OF AGRICULTURE

Cooperative ECONOMIC INSECT REPORT

Issued by

PLANT PEST CONTROL DIVISION
AGRICULTURAL RESEARCH SERVICE
UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

Reports and inquiries pertaining to this release should be mailed to:

Survey and Detection Operations
Plant Pest Control Division
Agricultural Research Service
United States Department of Agriculture
Washington 25, D. C.

Volume 10 December 9, 1960 Number 50

COOPERATIVE ECONOMIC INSECT REPORT

Highlights of Insect Conditions

GREENBUG,first collected in Oklahoma in late October (CEIR 10(46):1075) and reported in 22 of 25 panhandle counties surveyed in Texas (CEIR 10(47):1087), now becoming increasingly common in all parts of Oklahoma. APPLE GRAIN APHID increasing in numbers and more common than a few weeks ago throughout Oklahoma. (p. 1123).

CITRUS INSECT situation in Florida. (p. 1124).

Some BOLL WEEVIL hibernation surveys - fall 1960. Average counts this fall exceed those of the 1959 survey in each reporting state. (p. 1125).

INSECT DETECTION: European corn borer found for first time in Habersham, Union and White Counties, Georgia. (p. 1123).

INSECTS not known to occur in the United States. (p. 1129).

MORMON CRICKET adult survey - fall 1960 (map). (See end of report).

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Reports in this issue are for week ending December 2, unless otherwise indicated.

WEATHER BUREAU 30-DAY OUTLOOK

DECEMBER 1960

The Weather Bureau's 30-day outlook for December calls for temperatures to average below seasonal normals over the eastern half of the Nation and in the Northern Plains, with greatest departures over the lower Mississippi and Ohio Valleys. Above-normal temperatures are predicted over the southern Rocky Mountain and Plateau States, with near normal in adjacent areas. Precipitation is expected to exceed normal in Pacific Coast States, as well as over the Great Lakes region and the Atlantic seaboard, with early season snows in more northerly portions. Subnormal precipitation is expected over the Southern and Central Plains and middle Mississippi Valley, while near-normal amounts are indicated for unspecified areas.

Weather forecast given here is based on the official 30-day "Resume and Outlook," published twice a month by the Weather Bureau. You can subscribe through Superintendent of Documents, Washington 25, D. C. Price $4.80 a year, $2.40 a half year.

WEATHER OF THE WEEK ENDING DECEMBER 5

This week was about 10° to 15° colder than last week in the Midcontinent and Southeast and a few degrees colder over most of the remainder of the Nation.

The intense storm over the Great Plains at the end of the previous period moved northeastward across Lake Superior into Canada on the 29th. On the 28th, high winds which reached speeds of 72 m.p.h., at Duluth, Minnesota, caused considerable damage to property along the north shore of Lake Superior. The storm was followed by an inflow of cold air which covered most of the Nation by November 30 and brought the coldest weather of the fall and winter season to date to many areas east of the Rocky Mountains. Temperatures fell to subzero levels in the North Central Interior as far south as Nebraska and Iowa. Parshall, North Dakota, and Valentine, Nebraska, reported lows of -24° and -7°, respectively, on November 30; and Bemidji, Minnesota, had -19° and Audubon, Iowa, -5° on December 1. As the extensive cold air mass moved slowly southeastward during the remainder of the week, freezing occurred at Lake Charles and New Orleans, Louisiana; Mobile, Alabama; and Tallahassee and Jacksonville, Florida.

On December 4, another storm moved out of the Rockies into the central Great Plains, where it gained strong intensity and produced the second blizzard within a week in the northern Great Plains. This latter storm was preceded by a rapid rise of temperatures in the Midcontinent region the last 2 days of the period, with maxima in the 50's as far north as Nebraska, Iowa, and southern portions of Wisconsin and Michigan. However, cool, dry, sunny weather still prevailed in the East. Total precipitation for the week exceeded 1/2 inch along the west coast, in most of the Mississippi and Ohio Valleys and Northeast, and parts of the northern Great Plains. Precipitation was very light in southern areas east of the Rocky Mountains, and in some areas of the Southeast soil moisture is short. Some areas of Georgia have had less than 1 inch of rain during the last 2 months.

A storm, with hurricane-force winds along the central and north coast of California and up to 50 m.p.h. elsewhere in the State, brought heavy precipitation to the Pacific States and some other parts of the Far West about the middle of the week. Totals for the week ranged from 2 to 7 inches in northern California and 1 to over 2 inches along the central and south coast. Totals exceeded 2 inches in southwestern Oregon, and were about an inch along the north coast of Oregon and coastal areas of Washington. Weekly totals were less than 1/2 inch in most interior areas, but Utah and northern Nevada reported beneficial amounts, nevertheless. The mountain snowpack was increased in Utah, and more snow fell in the Cascades, where depths range from 50 to 60 inches at elevations above 3,000 feet. Weekend snows in the higher mountains of New Mexico ranged up to 12 inches.

(Weather continued on page 1128).

CEREAL AND FORAGE INSECTS

GREENBUG (Toxoptera graminum) - OKLAHOMA - Light infestations becoming increasingly common in many fields in all parts of State. Populations show gradual increases over those noted during past few weeks, but continue light (very few infestations exceeding 10 per linear foot) and somewhat scattered in all areas. Damaging numbers have been found in only one field so far this fall; this field is located in the Hennessey area, Kingfisher County. (Okla. Coop. Sur.).

CORN LEAF APHID (Rhopalosiphum maidis) - OKLAHOMA - Continued common in light numbers in many fields of small grain checked throughout State, but not as plentiful as a few weeks ago. (Okla. Coop. Sur.). ARIZONA - Medium to heavy populations present on barley in Yuma County. (Ariz. Coop. Sur.).

ENGLISH GRAIN APHID (Macrosiphum granarium) - OKLAHOMA - Light numbers (up to 10 per linear foot) common in fields of small grain in many areas. This is probably the most widespread aphid species in small grain in north central area at present. (Okla. Coop. Sur.).

APPLE GRAIN APHID (Rhopalosiphum fitchii) - OKLAHOMA - Increasing in numbers and much more common than a few weeks ago in all parts of State. Light infestations (up to 25 per linear foot) present in scattered fields of small grain throughout north central area. Counts in infested fields checked in other areas of State averaged 5 per linear foot or less. (Okla. Coop. Sur.).

APHIDS - NORTH CAROLINA - Unidentified species feeding on oats in Duplin County; have nearly destroyed one 10-acre field. (Federonko, Nov. 25). OKLAHOMA - Populations of Rhopalosiphum rufiabdominalis continued in fields previously reported infested in Okfuskee County, and have been noted in some additional fields of small grain in same area. (Okla. Coop. Sur.).

EUROPEAN CORN BORER (Pyrausta nubilalis) - GEORGIA - Survey revealed Habersham, Union and White Counties to be newly infested counties. (Blasingame et al.).

A CUTWORM - OKLAHOMA - Limited numbers of early-instar larvae of undetermined species noted in a few fields of small grain checked in Kingfisher and Blaine Counties. (Okla. Coop. Sur.).

A WHITE GRUB - OKLAHOMA - Unidentified species causing some damage to wheat in localized areas of Cotton County. (Okla. Coop. Sur.).

A WIREWORM - OKLAHOMA - Unidentified species damaging some fields of wheat in localized areas of Cotton County. (Okla. Coop. Sur.).

HESSIAN FLY (Phytophaga destructor) - NEBRASKA - Moderate to heavy infestation of flax-seed stage found in several fields in Furnas County. (Roselle).

WINTER GRAIN MITE (Penthaleus major) - OKLAHOMA - Light numbers appearing in isolated fields of small grain in widely scattered areas of the State. (Okla. Coop. Sur.).

A RICE DELPHACID (Sogata orizicola) - LOUISIANA - Surveys begun in May to determine presence of this species in fields of rice in the State have been completed, with negative results. Most of these fields were surveyed several times during the summer, resulting in a total of 345,600 acres examined. Survey was conducted by PPC and State personnel. (Spink).

SPOTTED ALFALFA APHID (Therioaphis maculata) - OKLAHOMA - Light to medium infestations noted in Garvin and Harper Counties. (Okla. Coop. Sur.). ARIZONA - An increase in numbers has occurred in Yuma County and in Theba area of western Maricopa County. However, infestations appear to be declining because of disease which is very common at this time. (Ariz. Coop. Sur.).

THREE-CORNERED ALFALFA HOPPER (*Spissistilus festinus*) - TEXAS - Adults averaged 3-5 per 5 sweeps in alfalfa in Burleson County. (Newton).

WESTERN YELLOW-STRIPED ARMYWORM (*Prodenia praefica*) - CALIFORNIA - Medium infestation of this species and *Estigmene acrea* present on alfalfa in Atascadero, San Luis Obispo County. (Cal. Coop. Rpt.).

FALL ARMYWORM (*Laphygma frugiperda*) - OKLAHOMA - Continues to infest some fields of alfalfa and small grain checked in Harper County. (Okla. Coop. Sur.).

BEET ARMYWORM (*Spodoptera exigua*) - ARIZONA - Light infestations averaging 2 per 10 sweeps present in alfalfa in southwest and central areas. (Ariz. Coop. Sur.).

ALFALFA WEEVIL (*Hypera postica*) - NEW JERSEY - An unusual situation with regard to population present in Sussex and Warren Counties. Larval counts were 2-10 per sweep through August, with an increase (10-12 per sweep) noted in September and persisting through October. On November 2, a field near Blairstown (Warren County), previously not sampled, averaged 36.5 larvae per sweep. Many adults were also collected and eggs were found in stems. Injury to this field was visible from the road and similar to what would be expected during May and June. (L. W. Coles).

WHITE-FRINGED BEETLES (*Graphognathus* spp.) - NORTH CAROLINA - Results of survey indicate infestation to be in a comparatively concentrated area, with very little extension, in Sampson County. Found in 3 locations in county; one apparently an extension of old, previously treated Duplin County infestation. (Morgan). Infestation found on 250 acres in Faison area, Duplin County. (Federonko).

A MIRID - TEXAS - Heavy infestations of undetermined species present in flax in Bee and Live Oak Counties. (Edgar).

FRUIT INSECTS

WESTERN PEACH TREE BORER (*Sanninoidea exitiosa graefi*) - CALIFORNIA - Medium infestation present in peach trees in Meiners Oaks, Ventura County. (Cal. Coop. Rpt.).

WHITE PEACH SCALE (*Pseudaulacaspis pentagona*) - GEORGIA - Heavy infestation in commercial peach orchard in Dooly County. (Snapp, Nov. 21).

NAVEL ORANGEWORM (*Paramyelois transitella*) - CALIFORNIA - Medium in pomegranate fruit in Norco, Riverside County, and in orange fruit in Merced, Merced County. (Cal. Coop. Rpt.).

COTTONY-CUSHION SCALE (*Icerya purchasi*) - ARIZONA - Light infestation in a 40-acre lemon grove in Yuma County is being destroyed by natural vedalia population. Very few live scales can be found at present time. (Ariz. Coop. Sur.).

YUMA SPIDER MITE (*Eotetranychus yumensis*) - ARIZONA - Light to medium in many Yuma County citrus groves. Damage generally not heavy, but considerable fruit damage occurring in a few cases, particularly on tangerines. (Ariz. Coop. Sur.).

Citrus Insect Situation in Florida - Mid-November - PURPLE SCALE (*Lepidosaphes beckii*) infested 59 percent of groves checked. Activity, generally, will remain low in all districts. A few groves may develop moderate infestations. FLORIDA RED SCALE (*Chrysomphalus aonidum*) infested 72 percent of groves. Activity expected to take downward trend next week, but will be in high range until end of November. Populations, generally, will be near average level during next month. High activity present in upper east coast, Indian River, Bartow, Ridge and west coast districts. CITRUS RED MITE (*Panonychus citri*) infested 55 percent of groves. Activity will continue to increase during next month. Although statewide population is not expected to rise to average level by end of November, increasing numbers of groves will develop troublesome infestations. High activity is present in Orlando, Bartow and upper east coast districts. CITRUS RUST MITE (Phyllocoptruta oleivora) infested 81 percent of groves. Peak fall activity is expected within a week and activity will continue in high range during next month. Populations are above average at present and will increase. A majority of groves now have economic infestations. High activity present in Bartow, Gainesville, west coast, Orlando, Brooksville and Indian River districts. TEXAS CITRUS MITE (Eutetranychus banksi) infested 25 percent of groves. Populations will increase moderately during the coming month. This mite will be about as abundant as during 1959, but will not be a general problem. (Simanton, Thompson, Johnson (Citrus Exp. Sta., Lake Alfred)).

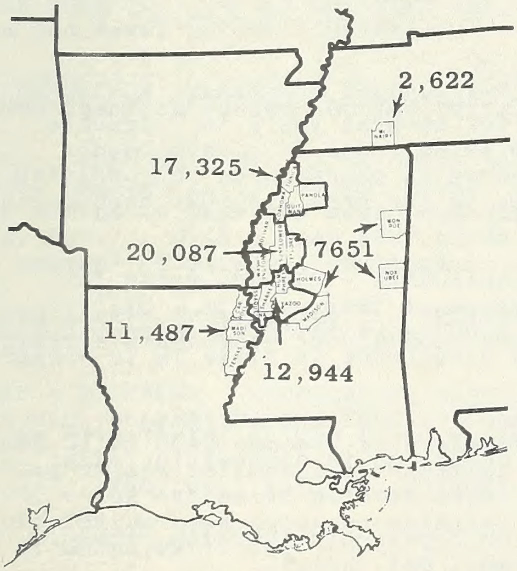
PECAN WEEVIL (Curculio caryae) - TEXAS - Moderate to heavy larval infestations, probably this species, present in new pecans in Seguin area, Guadalupe County. (Texas Coop. Rpt.).

HICKORY SHUCKWORM (Laspeyresia caryana) - NORTH CAROLINA - Injuring pecans in Richmond County. (Lewis, Farrier).

COTTON INSECTS

SOME BOLL WEEVIL HIBERNATION SURVEYS - FALL 1960

Collections of surface trash samples (two square yards per sample) have been completed in three cotton-producing states during the fall of 1960 by cooperating State and Federal agencies to determine the number of boll weevil (Anthonomus grandis) adults that went into hibernation during the same period. Average counts this fall exceed those of the 1959 survey in each reporting state. The counts indicate only a potential, the degree of infestation in 1961 depending largely on weather and other factors that will affect the weevils during the winter, spring and summer of 1961. In addition, spring surveys are normally conducted in the same locations where the fall surveys were conducted to determine the percentage of weevils that survive the winter.



LOUISIANA - Collections of surface ground trash samples were made November 8 through 28 in the northeastern area composed of Madison, East Carroll and Tensas Parishes. Three samples were collected at 5 locations each in East Carroll and Tensas Parishes and 20 locations in Madison Parish, for a total of 30 locations and 90 samples. The average number of weevils per acre was 6,860 in Madison Parish, 13,235 in East Carroll Parish and 14,365 in Tensas Parish, with a 3-parish area average of 11,487, compared with 8,097 for 1959 and 5,756 for 1958. Similar records have been made in Madison Parish for the past 25 years. Only in 1955 has a larger number of boll weevils been found in ground trash in that Parish than the 6,860 per acre found in the fall of 1960. (Smith et al.)

MISSISSIPPI - Collections of trash samples were begun November 14 and completed November 22. Three samples were taken from each location and either 7 or 8 locations were sampled in each area.

Wherever possible, samples were taken from locations that could be sampled again in the spring of 1961. The State was divided into 4 areas, with 4 counties per area, as follows: 1 - Lower delta (Sharkey, Issaquena, Yazoo, Humphreys Counties); 2 - Central delta (Washington, Bolivar, Sunflower, Leflore Counties); 3 - North delta (Coahoma, Tunica, Quitman, Panola Counties); and 4 - Hill section (Holmes, Madison, Noxubee, Monroe Counties). Ninety samples were taken from a total of 30 locations in each of three areas. Due to bad weather and for other reasons, only 15 samples were collected from Quitman County rather than the usual 21, resulting in a total of 354 samples for the State. The average number of weevils per acre for areas 1, 2, 3 and 4 was 12,944, 20,087, 17,325 and 7,651, respectively. The average number in the respective areas in the fall of 1959 was 4,215, 8,513, 4,787 and 2,991. The 1960 state average was 14,502 live weevils per acre, compared with 5,127 in 1959, 3,792 in 1958, 6,715 in 1957 and 2,091 in 1956. (Merkl et al.).

TENNESSEE - A survey was made in McNairy County to determine boll weevil population that went into hibernation this fall as this county usually represents the infestation of southern counties. Samples of woods trash were taken in environs of fields known to have been infested this season. A total of 12 samples was taken. The average number of weevils per acre was 2,622, compared with 1,882 in 1959 and 1,214 in 1958. This is the highest number of weevils ever taken in the fall trash examination. The average percent of survival in the State for the past 9 years is 35. As there is a relatively large number of weevils in hibernation at this time, a mild winter will probably result in there being a rather large number of weevils to infest fields in the spring of 1961. (Locke).

BOLL WEEVIL (Anthonomus grandis) - ILLINOIS - Collected at McClure, Alexander County, on October 29 in what is believed to be the northernmost cottonfield in the Nation this year. Late bolls were heavily infested but there was little evidence of damage to the crop. Three other fields examined between Olive and Cairo, in the same county, were also infested. (S. E. Jones).

PINK BOLLWORM (Pectinophora gossypiella) - LOUISIANA - Program conducted by PPC personnel has now been completed and resulted in the finding of 3 specimens in the State; 2 in De Soto Parish and 1 in Sabine Parish. (Spink).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

LODGEPOLE NEEDLE MINER (Recurvaria milleri) - CALIFORNIA - Controls programmed for this species and Dendroctonus monticolae for several years in lodgepole forests surrounding Tuolumne Meadows in Yosemite National Park have been successful. It is believed that control measures as planned can be completed in 1961 and prospects for preserving the trees in the area are most encouraging. (R. H. Sharp).

SPRUCE BUDWORM (Choristoneura fumiferana) - CALIFORNIA - Damaged white fir foliage apparently caused by an early infestation of this species. This will be confirmed in the spring of 1961 in a 2,000-acre white fir stand in Rush Creek area, Modoc County. Only present known occurrence in State is in Warner Mountain range. (U. R. Osborn, C. B. Eaton).

PINE WEBWORM (Tetralopha robustella) - VIRGINIA - Local medium infestation on loblolly pine near Cullen, Charlotte County, occurring in association with Rhyacionia sp. reported in CEIR 10(48):1101. (Morton, Tarpley, Nov. 28).

A PINE TIP MOTH - TEXAS - Heavy infestations on 3-year-old loblolly pines in southern Angelina County. (Texas For. Pest Comm., Oct. Rpt.).

JEFFREY PINE BEETLE (Dendroctonus jeffreyi) - CALIFORNIA - Outbreak causing complete kill of 65 Jeffrey pines in 300-acre stand in Mt. Waterman area of

Angelus National Forest. This is in Winston Spring sale area, where fire caused considerable damage last season. (R. Thiebaud).

SOUTHERN PINE BEETLE (*Dendroctonus frontalis*) - TEXAS - Activity greatly decreased. Only 2 known spots contained active broods; controls applied to both. (Texas For. Pest Comm., Oct. Rpt.).

A JUNE BEETLE (*Polyphylla variolosa*) - VERMONT - Larvae present in the State nursery at Essex Junction, Chittenden County. A quarter of an acre is involved, with a loss of approximately 200,000 seedlings. (Walker, Pratt; Nov. 28).

AN APHID (*Lachnus salignus*) - MARYLAND - Populations have been heavy on willows during November at many localities in Montgomery and Prince Georges Counties. (U. Md., Ent. Dept.). VIRGINIA - Heavily infesting weeping willow in Newport News and in King George County. (Stump, Hall, Tarpley; Nov. 28).

A SCALE INSECT (*Mycetococcus ehrhorni*) - CALIFORNIA - Medium on oaks in Grover City, San Luis Obispo County. (Cal. Coop. Rpt.).

A FALSE SPIDER MITE (*Brevipalpus cardinalis*) - CALIFORNIA - Medium on ash trees in the Lancaster area of Los Angeles County. (Cal. Coop. Rpt.).

A SPIDER MITE (*Schizotetranychus celarius*) - CALIFORNIA - Heavy on several species of bamboo in Carmel Valley, Monterey County. (Cal. Coop. Rpt.).

INSECTS AFFECTING MAN AND ANIMALS

COMMON CATTLE GRUB (*Hypoderma lineatum*) - OKLAHOMA - Larvae common in backs of cattle throughout State; averaged 3 per animal on limited number of 500-pound calves checked in Noble County. (Okla. Coop. Sur.). NEW MEXICO - Larvae of various sizes being found in backs of range cattle in Silver City area, Grant County. Several animals found from which larvae had penetrated skin and dropped to ground. (N. M. Coop. Rpt.).

SCREW-WORM (*Callitroga hominivorax*) - LOUISIANA - One new infestation reported from Red River Parish. (Spink).

A HIPPOBOSCID (*Lipoptena* sp.) - TEXAS - Counts on 4 deer killed in Brazos and Grimes Counties ranged 100-500 per animal. (Newton).

LICE - OKLAHOMA - Medium to heavy infestations of unidentified species noted on cattle checked in Cleveland, Bryan, Choctaw and Pushmataha Counties. *Haematopinus suis* medium to heavy on some hogs checked in Bryan and Choctaw Counties. (Okla. Coop. Sur.). UTAH - Some beef herds in Cache and Weber Counties have been treated for control of lice. (Knowlton).

BEDBUG (*Cimex lectularius*) - VIRGINIA - Heavy infestation present in a house trailer in Blacksburg, Montgomery County. (Rowell, Nov. 21).

TICKS - OKLAHOMA - *Dermacentor albipictus* common on livestock checked in Sequoyah, Pushmataha and Choctaw Counties; averaged 11 engorged females per animal on 80 cows checked in Pushmataha County. Heavy on deer killed during hunting season on Fort Sill military reservation. (Okla. Coop. Sur.). NEW MEXICO - Dog owners in several areas of State report infestations of *Rhipicephalus sanguineus* on animals; also a nuisance in and around homes. (N. M. Coop. Rpt.).

MISCELLANEOUS INSECTS

A POWDER POST BEETLE (*Lyctus africanus*) - CALIFORNIA - Heavy infestation in bamboo curtains occurred in a home in El Sobrante, Contra Costa County. This is one of several bamboo borers which have been found infesting dry bamboo imports. They appear to remain closely attached to dry bamboo and have not otherwise become a problem. (Cal. Coop. Rpt.).

IMPORTED FIRE ANT (*Solenopsis saevissima richteri*) - NORTH CAROLINA - Found on 2 properties in Brunswick County, week of November 10. (Bowen).

BROWN-BANDED ROACH (*Supella supellectilium*) - MARYLAND - Very abundant in several row houses at Baltimore. (U. Md., Ent. Dept.). VIRGINIA - Heavy in a home in Roanoke, Roanoke County. (Rowell, Nov. 19).

ANTS - MARYLAND - Winged forms of *Tetramorium caespitum* abundant in new building at Princess Anne, Somerset County; workers of *Lasius interjectus* numerous under garage at Owings Mills, Baltimore County. (U. Md., Ent. Dept.).

CORRECTIONS

CEIR 10(47):1092 - TICKS - OKLAHOMA - Dermacentor albopictus should read Dermacentor albipictus.

CEIR 10(49):1116 - LIGHT TRAP COLLECTIONS - SOUTH CAROLINA - Delete Clemson entry.

LIGHT TRAP COLLECTIONS

	Pseud. unip.	Laphyg. frug.	Prod. ornith.	Agrot. ips.	Perid. saucia	Feltia subterr.	Helio. zea
ARIZONA							
Mesa 11/21-26			7		4		
FLORIDA							
Quincy 11/22, 28	2	2		1		4	6
Monticello 11/22-29				1		1	
LOUISIANA							
Baton Rouge 11/25-12/1	22	4		1		4	
NEBRASKA							
North Platte 11/18-26	2			64	7		
SOUTH CAROLINA							
Charleston 11/21-27	31	1	5	73		64	12
Charleston 11/28-12/4	2			23		17	1

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(Weather continued from page 1122)

General precipitation which fell in the eastern half of the Nation the first 2 days of the week, was mostly snow in the northern areas, with falls of 8 to 14 inches in the upper portions of Minnesota, Wisconsin, and Michigan, and 6 to 8 inches on the western slopes of the Appalachians in Pennsylvania and West Virginia. On the 30th, moderate to heavy snow in western New York State ranged up to 16 inches near Buffalo, and winds up to 50 m.p.h. caused considerable drifting. However, higher temperatures removed virtually all the snow cover in the lower Great Lakes region and Northeast by the end of the period. (Summary supplied by U. S. Weather Bureau).

INSECTS NOT KNOWN TO OCCUR IN THE UNITED STATES

PEACH BUPRESTID (Capnodis tenebrionis L.)

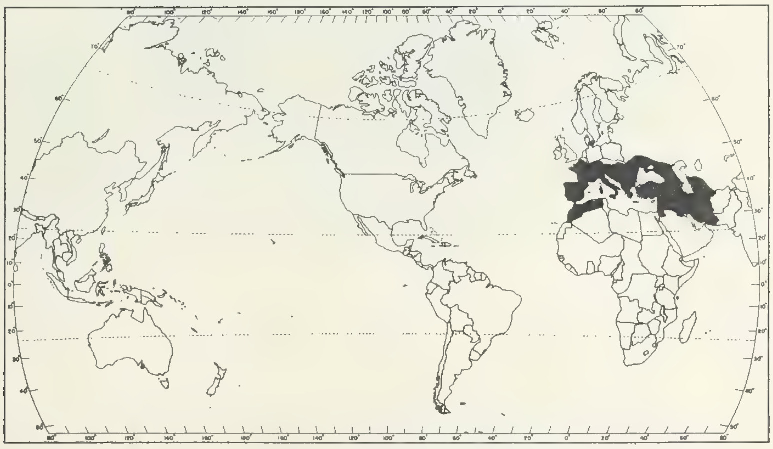
Economic Importance: This wood borer is one of the most formidable enemies of stone fruit production, particularly peach and apricot, in the Mediterranean Region. In Morocco heavy losses have been reported in young orchards. The insect is regarded as the most serious pest of plum trees in coastal Algeria. Italy also rates it as a major pest of stone fruits.

Damage to Apple Tree by Capnodis sp.

Hosts: Peach, almond, plum, apricot, cherry and other related stone fruits.

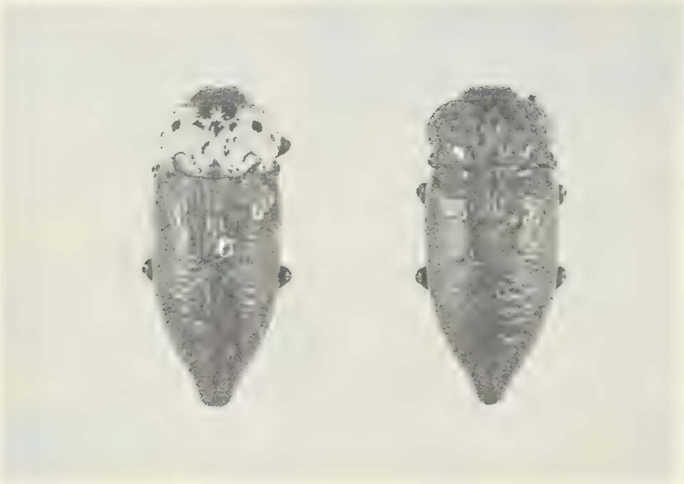
Distribution: Occurs generally in the Mediterranean Region and as far east as Iran. Also occurs in Austria, Bulgaria, South Germany, Hungary, Romania, Switzerland, Yugoslavia and parts of the USSR.

Life History and Habits: Adults appear at beginning of May on the coast of Algeria and in Italy. They feed for an indefinite period. Emergence continues over a period of several months with the adults being most abundant from mid-July to early September. The females are much more numerous than the males. The adults are frequently observed in the orchards. Their flight is awkward, noisy and rapid. They feed on the young branches. The damage caused by the adults is of little importance in comparison to that of the



General Distribution of Capnodis tenebrionis larvae which almost always kill the young trees which they attack. Mating occurs on small branches of the host in July and oviposition begins shortly thereafter. The eggs are deposited on the trunk at or slightly below ground level. Females lay from 50-120 eggs. The eggs hatch rapidly but larval development is slow, lasting 2 years. One or more larvae may be found per trunk, near or at ground level. They are found under the bark or deep in the wood in large galleries. Normally the larva is found in a "U" shape. The attack is more severe in trees 2 to 3 years of age. Pupation occurs in a cell 3 cm. long in the lower trunk or principal roots. Pupation lasts about one month.

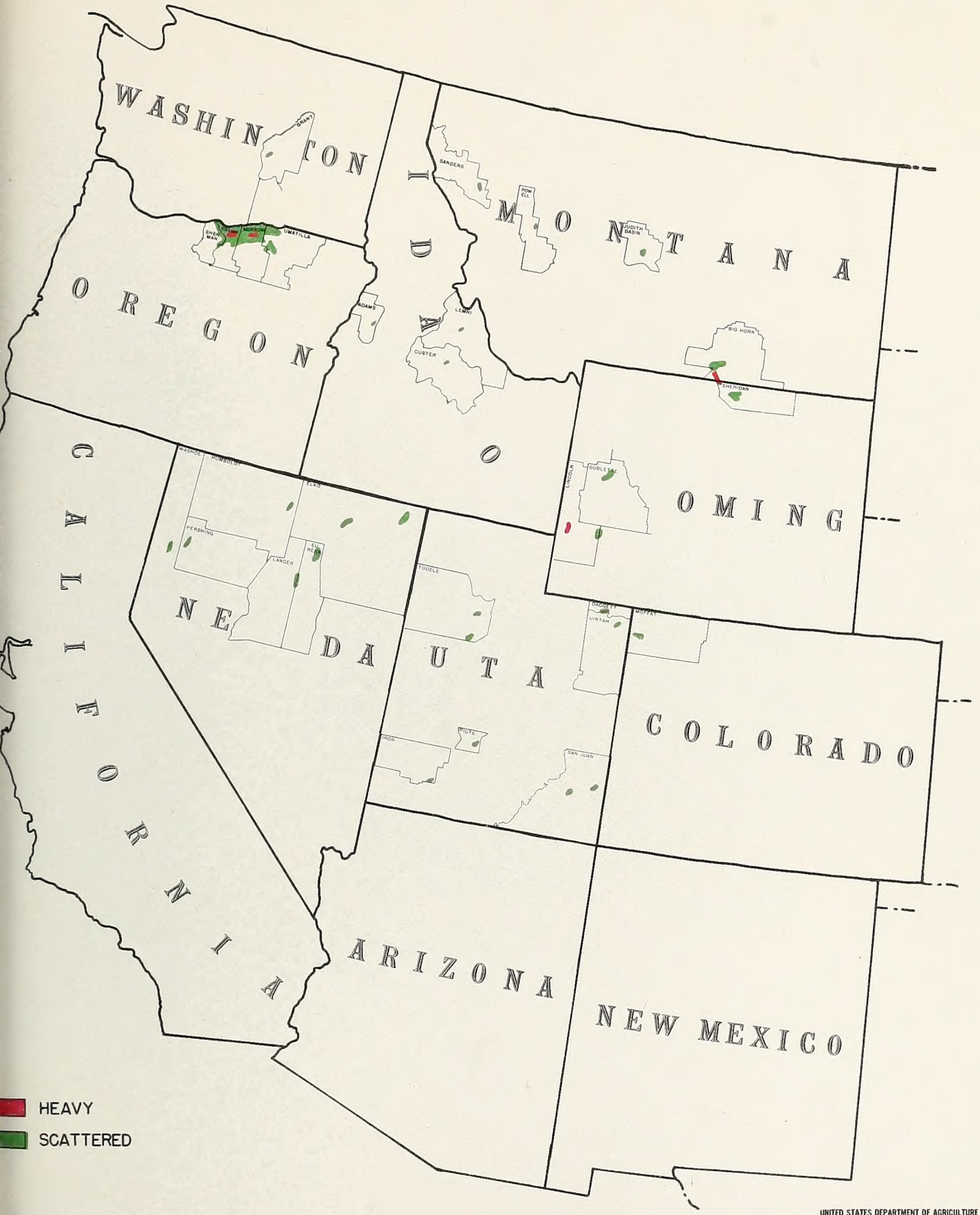
Description: ADULT - This buprestid is large, ranging from 15 to 27 mm. with the males smaller than females. Males rarely over 20 mm. in length. Color generally dull black. Head large, sunk in the thorax. Eyes brown, elliptical. Antennae serriform, 11-segmented, longer than head and folded under prothorax when insect is at rest. Pronotum large, much broader than long, slightly wider than base of elytra, with sides rounded. Surface with dense, pruinose punctures and numerous glazed areas. Elytra sturdy, large, coriaceous, uniformly dull black, 2.5 to 3 times longer than pronotum. Punctation, under a hand lens, elongate, irregular and arranged in striae. Legs relatively short; tarsi strongly dilated, with curved bristles on internal surface. Ventral surface of body dull black. Underwings membranous, well developed, smoky colored. EGG elliptical, white, opaque, 1 mm. x 1.5 mm. LARVA - Full-grown larva 60-65 mm., white, flabby, legless. General appearance similar to that of other buprestid larvae. (Prepared in Survey and Detection Operations in cooperation with other ARS agencies). CEIR 10(50) 12-9-60.



Adults of Capnodis tenebrionis (Showing Variation)

Major reference: Balachowsky, A. and Mesnil, L. 1935. Les Insectes Nuisibles aux Plantes Cultivees, Vol. 1, 1137 pp., Paris.

MORMON CRICKET ADULT SURVEY —— FALL 1960



UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
PLANT PEST CONTROL DIVISION
WESTERN REGION
Oakland, California
October 1960

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